

EPA WORK ASSIGNMENT NO: 041-2Z00 EPA CONTRACT NO: 68-W8-0110 FOSTER WHEELER ENVIRONMENTAL CORPORATION ARCS II PROGRAM

FINAL SITE INSPECTION PRIORITIZATION (SIP) ASARCO PERTH AMBOY, MIDDLESEX COUNTY, NEW JERSEY CERCLIS NO: NJD039116207

SEPTEMBER 1997

VOLUME III OF III

NOTICE

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RECOMMENDATIONS

The overall site score for the ASARCO site is 0.45 based on an area of observed soil contamination for the soil exposure pathway, and a potential to release to groundwater, surface water, and air.

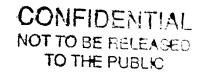
The groundwater pathway score is 0.47 and was evaluated on a potential to release basis. Available data which lacks appropriate QA/QC information suggests a release to the upper aquifer; however, sampling with proper QA/QC to confirm an observed release to the Farrington Sand Aquifer from an on-site monitoring well, would only increase the site score to 0.98. The low score for the groundwater pathway is due to the deeper aquifer not being hydraulically connected to the upper aquifer and the low population served by the deeper aquifer. Based on the target information, this pathway is not a major pathway of concern.

The surface water pathway score is 0.01 based on a potential to release basis. The surface water pathway is a major pathway of concern for this site due to the presence of sensitive environments and fisheries. Available data lacking QA/QC information suggests a release to surface water, and that if an observed release were documented in a sediment sample from the Arthur Kill the site score would increase to 50.00. However, due to the industrial nature of the area, it would not be possible to attribute contamination of targets to the site. Attribution of contaminants in the surface water pathway to the site would also be difficult due to the tidal nature of the Arthur Kill.

The soil exposure pathway was evaluated based on an area of observed contamination. The low soil pathway score of 0.60 is due to the lack of a target population. The score indicates that soil exposure pathway is not of major concern and there are no feasible scenarios for the soil exposure pathway that would result in a site score above 28.5.

The air pathway is evaluated based on a potential to release basis. The air pathway score of 0.46 is due to the presence of a high population and sensitive environments within the 4-mile target distance limit. There are no feasible scenarios for this pathway that would result in a site score above 28.5.

Based on the available data and the analysis presented above, and ongoing remediation of the site in accordance with an MOA with the NJDEP, No Further Remedial Action Planned (NFRAP) is recommended for the ASARCO site.



PREScore 4.0 NPL Characteristics Data Collection Form ASARCO - 08/04/97

Record Information

1. Site Name: ASARCO (as entered in CERCLIS)

2. Site CERCLIS Number: NJD039116207

3. Site Reviewer: Leigh Yates

4. Date: 7/31/97

5. Site Location: Perth Amboy, Middlesex Co., New Jersey (City/County, State)

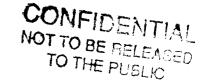
6. Congressional District:

7. Site Coordinates: Multiple

Latitude: 74°15'17.0" Longitude: 041°31'50.0"

Site Description

- 1. Setting: Urban
- 2. Current Owner: Private Industrial
- 3. Current Site Status: Site with Unknown Source
- 4. Years of Operation: Active Site , from and to dates: 1894 to present
- 5. How Initially Identified: State/Local Program
- 6. Entity Responsible for Waste Generation:
 - Manufacturing
 - Primary Metal Industries
- 7. Site Activities/Waste Deposition:
 - Waste Piles
 - Drum/Container Storage
 - Tanks Above Ground
 - Tanks Below Ground



PREScore 4.0 NPL Characteristics Data Collection Form ASARCO - 08/04/97

Waste Description

- 8. Wastes Deposited or Detected Onsite:
 - Organic Chemicals
 - Inorganic Chemicals
 - Metals



PREScore 4.0 NPL Characteristics Data Collection Form ASARCO - 08/04/97

Response Actions

- 9. Response/Removal Actions:
 - Site Access Has Been Restricted

RCRA Information

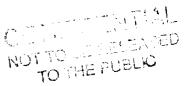
- 10. For All Active Facilities, RCRA Site Status:
 - Not Applicable

Demographic Information

- 11. Workers Present Onsite: Unknown
- 12. Distance to Nearest Non-Worker Individual: > 10 Feet 1/4 Mile
- 13. Residential Population Within 1 Mile: 31.0
- 14. Residential Population Within 4 Miles: 248505.0

Water Use Information

- 15. Local Drinking Water Supply Source:
 - No Water Withdrawals Within Target Distance Limits
- 16. Total Population Served by Local Drinking Water Supply Source: Not Applicable
 - 17. Drinking Water Supply System Type for Local Drinking Water Supply Sources:
 - Municipal (Services over 25 People)



PREScore 4.0 NPL Characteristics Data Collection Form ASARCO - 08/04/97

- 18. Surface Water Adjacent to/Draining Site:
 - Other Estuary

PRESCORE 4.0 HRS DOCUMENTATION RECORD ASARCO - 08/04/97

 Site Name: ASARCO (as entered in CERCLIS)

2. Site CERCLIS Number: NJD039116207

3. Site Reviewer: Leigh Yates

4. Date: 7/31/97

5. Site Location: Perth Amboy, Middlesex Co., New Jersey (City/County, State)

6. Congressional District:

7. Site Coordinates: Multiple

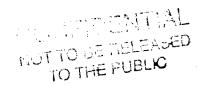
Latitude: 74°15'17.0" Longitude: 041°31'50.0"

	Score
Ground Water Migration Pathway Score (Sgw)	0.47
Surface Water Migration Pathway Score (Ssw)	0.01
Soil Exposure Pathway Score (Ss)	0.60
Air Migration Pathway Score (Sa)	0.46

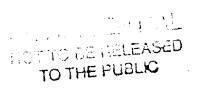
Site Score	0.45

\mathtt{NOTE}

Site names, and references to specific parcels or properties, are provided for general identification purposes only. Knowledge regarding the extent of sites will be refined as more information is developed during the RI/FS and even during implementation of the remedy.



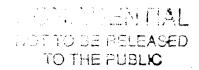
PREScore 4.0
HRS DOCUMENTATION RECORD
ASARCO - 08/04/97



PREScore 4.0 GROUND WATER MIGRATION PATHWAY SCORESHEET ASARCO - 08/04/97

GROUND WATER MIGRATION PATHWAY Factor Categories & Factors	Maximum Value	Value Assigned
Likelihood of Release to an Aquifer Aquifer: Farrington Sand		
 Observed Release Potential to Release Containment Net Precipitation Depth to Aquifer Travel Time Potential to Release [lines 2a(2b+2c+2d)] Likelihood of Release 	550 10 10 5 35 500 550	0 10 6 3 15 240 240
Waste Characteristics		
4. Toxicity/Mobility 5. Hazardous Waste Quantity 6. Waste Characteristics	* * 100	1.00E+02 10 6
Targets		
7. Nearest Well 8. Population 8a. Level I Concentrations 8b. Level II Concentrations 8c. Potential Contamination 8d. Population (lines 8a+8b+8c) 9. Resources 10. Wellhead Protection Area 11. Targets (lines 7+8d+9+10) 12. Targets (including overlaying aquifers) 13. Aquifer Score	50 ** ** ** 5 20 ** 100	1.80E+01 0.00E+00 0.00E+00 9.00E+00 0.00E+00 0.00E+00 2.70E+01 2.70E+01 0.47
GROUND WATER MIGRATION PATHWAY SCORE (Sgw)	100	0.47

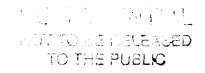
^{*} Maximum value applies to waste characteristics category. ** Maximum value not applicable.



PREScore 4.0 SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET ASARCO - 08/04/97

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors DRINKING WATER THREAT	Maximum Value	Value Assigned
Likelihood of Release		
1. Observed Release 2. Potential to Release by Overland Flow 2a. Containment	550 10	0
2b. Runoff 2c. Distance to Surface Water 2d. Potential to Release by Overland Flow [lines 2a(2b+2c)] 3. Potential to Release by Flood	25 25 500	2 25 270
3a. Containment (Flood) 3b. Flood Frequency 3c. Potential to Release by Flood (lines 3a x 3b)	10 50 500	10 25 250
4. Potential to Release (lines 2d+3c) 5. Likelihood of Release	500 550	500 500
Waste Characteristics		
6. Toxicity/Persistence 7. Hazardous Waste Quantity 8. Waste Characteristics	* * 100	1.00E+04 10 18
Targets		
9. Nearest Intake 10. Population	50	0.00E+00
10a. Level I Concentrations 10b. Level II Concentrations 10c. Potential Contamination 10d. Population (lines 10a+10b+10c)	** ** **	0.00E+00 0.00E+00 0.00E+00 0.00E+00
11. Resources 12. Targets (lines 9+10d+11)	5 **	0.00E+00 0.00E+00
13. DRINKING WATER THREAT SCORE	100	0.00

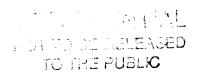
^{*} Maximum value applies to waste characteristics category.
** Maximum value not applicable.



PREScore 4.0 SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET ASARCO - 08/04/97

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors HUMAN FOOD CHAIN THREAT	Maximum Value	Value Assigned
Likelihood of Release		
14. Likelihood of Release (same as line 5)	550	500
Waste Characteristics		
15. Toxicity/Persistence/Bioaccumulation 16. Hazardous Waste Quantity 17. Waste Characteristics	* * 1000	5.00E+07 10 100
Targets		
18. Food Chain Individual 19. Population 19a. Level I Concentrations 19b. Level II Concentrations	50 ** **	0.00E+00 0.00E+00 0.00E+00
19c. Pot. Human Food Chain Contamination 19d. Population (lines 19a+19b+19c) 20. Targets (lines 18+19d)	** ** **	9.00E-07 9.00E-07 9.00E-07
21. HUMAN FOOD CHAIN THREAT SCORE	100	0.00

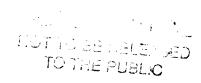
^{*} Maximum value applies to waste characteristics category.
** Maximum value not applicable.



PREScore 4.0 SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT SCORESHEET ASARCO - 08/04/97

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors ENVIRONMENTAL THREAT	Maximum Value	Value Assigned
Likelihood of Release		
22. Likelihood of Release (same as line 5)	550	500
Waste Characteristics		
23. Ecosystem Toxicity/Persistence/Bioacc. 24. Hazardous Waste Quantity 25. Waste Characteristics	* * 1000	5.00E+08 10 180
Targets		
26. Sensitive Environments 26a. Level I Concentrations 26b. Level II Concentrations 26c. Potential Contamination 26d. Sensitive Environments (lines 26a+26b+26c) 27. Targets (line 26d)	** ** ** **	0.00E+00 0.00E+00 7.00E-03 7.00E-03
28. ENVIRONMENTAL THREAT SCORE	60	0.01
29. WATERSHED SCORE	100	0.01
30. SW: OVERLAND/FLOOD COMPONENT SCORE (Sof)	100	0.01

^{*} Maximum value applies to waste characteristics category.



^{**} Maximum value not applicable.

PREScore 4.0 GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET ASARCO - 08/04/97

GROUND WATER TO SURFACE WATER MIGRATION COMPONENT Factor Categories & Factors DRINKING WATER THREAT	Maximum Value	Value Assigned
Likelihood of Release to Aquifer Aquifer: Terminal Moraine		
 Observed Release Potential to Release 2a. Containment 2b. Net Precipitation 2c. Depth to Aquifer 2d. Travel Time 2e. Potential to Release [lines 2a(2b+2c+2d)] Likelihood of Release 	550 10 10 5 35 500 550	0 10 6 5 35 460 460
Waste Characteristics		
4. Toxicity/Mobility/Persistence 5. Hazardous Waste Quantity 6. Waste Characteristics	* * 100	1.00E+02 10 6
Targets		
7. Nearest Intake 8. Population 8a. Level I Concentrations 8b. Level II Concentrations 8c. Potential Contamination 8d. Population (lines 8a+8b+8c) 9. Resources 10. Targets (lines 7+8d+9)	50 ** ** ** 5 **	0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00 0.00E+00
11. DRINKING WATER THREAT SCORE	100	0.00

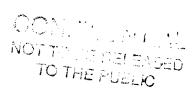
^{*} Maximum value applies to waste characteristics category. ** Maximum value not applicable.



PREScore 4.0 GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET ASARCO - 08/04/97

GROUND WATER TO SURFACE WATER MIGRATION COMPONENT Factor Categories & Factors HUMAN FOOD CHAIN THREAT	Maximum Value	Value Assigned
Likelihood of Release		
12. Likelihood of Release (same as line 3)	550	460
Waste Characteristics		
13. Toxicity/Mobility/Persistence/Bioacc. 14. Hazardous Waste Quantity 15. Waste Characteristics	* * 1000	1.00E+05 10 32
Targets		
16. Food Chain Individual 17. Population 17a. Level I Concentrations 17b. Level II Concentrations 17c. Pot. Human Food Chain Contamination 17d. Population (lines 17a+17b+17c) 18. Targets (lines 16+17d)	50 ** ** ** **	0.00E+00 0.00E+00 0.00E+00 1.80E-07 1.80E-07
19. HUMAN FOOD CHAIN THREAT SCORE	100	0.00

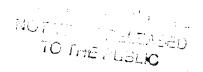
^{*} Maximum value applies to waste characteristics category. ** Maximum value not applicable.



PREScore 4.0 GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET ASARCO - 08/04/97

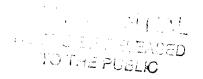
GROUND WATER TO SURFACE WATER MIGRATION COMPONENT Factor Categories & Factors ENVIRONMENTAL THREAT	Maximum Value	Value Assigned
Likelihood of Release		
20. Likelihood of Release (same as line 3)	550	460
Waste Characteristics		
21. Ecosystem Tox./Mobility/Persist./Bioacc. 22. Hazardous Waste Quantity 23. Waste Characteristics	* * 1000	5.00E+04 10 18
Targets		
24. Sensitive Environments 24a. Level I Concentrations 24b. Level II Concentrations 24c. Potential Contamination 24d. Sensitive Environments (lines 24a+24b+24c) 25. Targets (line 24d)	** ** ** **	0.00E+00 0.00E+00 1.40E-03 1.40E-03
26. ENVIRONMENTAL THREAT SCORE	60	0.00
27. WATERSHED SCORE	100	0.00
28. SW: GW to SW COMPONENT SCORE (Sgs)	100	0.00

^{*} Maximum value applies to waste characteristics category. ** Maximum value not applicable.



PREScore 4.0 SOIL EXPOSURE PATHWAY SCORESHEET ASARCO - 08/04/97

SOIL EXPOSURE PATHWAY Factor Categories & Factors RESIDENT POPULATION THREAT	Maximum Value	Value Assigned
Likelihood of Exposure		
1. Likelihood of Exposure	550	550
Waste Characteristics		
2. Toxicity 3. Hazardous Waste Quantity 4. Waste Characteristics	* * 100	1.00E+04 10 18
Targets		
5. Resident Individual 6. Resident Population	50	0.00E+00
6a. Level I Concentrations 6b. Level II Concentrations	** ** **	0.00E+00 0.00E+00
6c. Resident Population (lines 6a+6b) 7. Workers 8. Resources 9. Terrestrial Sensitive Environments 10. Targets (lines 5+6c+7+8+9)	15 5 ***	0.00E+00 5.00E+00 0.00E+00 0.00E+00 5.00E+00
11. RESIDENT POPULATION THREAT SCORE	**	4.95E+04

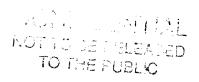


^{*} Maximum value applies to waste characteristics category.
** Maximum value not applicable.
*** No specific maximum value applies, see HRS for details.

PREScore 4.0 SOIL EXPOSURE PATHWAY SCORESHEET ASARCO - 08/04/97

SOIL EXPOSURE PATHWAY Factor Categories & Factors NEARBY POPULATION THREAT	Maximum Value	Value Assigned
Likelihood of Exposure		
12. Attractiveness/Accessibility 13. Area of Contamination 14. Likelihood of Exposure	100 100 500	5.00E+00 5.00E+00 5.00E+00
Waste Characteristics		
15. Toxicity 16. Hazardous Waste Quantity 17. Waste Characteristics	* * 100	1.00E+04 10 18
Targets		
18. Nearby Individual 19. Population Within 1 Mile 20. Targets (lines 18+19)	1 ** **	1.00E+00 3.00E+00 4.00E+00
21. NEARBY POPULATION THREAT SCORE	**	3.60E+02
SOIL EXPOSURE PATHWAY SCORE (Ss)	100	0.60

^{*} Maximum value applies to waste characteristics category. ** Maximum value not applicable.



PREScore 4.0 AIR PATHWAY SCORESHEET ASARCO - 08/04/97

AIR MIGRATION PATHWAY Factor Categories & Factors	Maximum Value	Value Assigned
Likelihood of Release		
1. Observed Release 2. Potential to Release 2a. Gas Potential to Release 2b. Particulate Potential to Release 2c. Potential to Release 3. Likelihood of Release	550 500 500 500 550	0 175 196 196 196
Waste Characteristics		
4. Toxicity/Mobility 5. Hazardous Waste Quantity 6. Waste Characteristics	* * 100	2.00E+00 10 2
Targets		
7. Nearest Individual 8. Population	50	2.00E+01
8a. Level I Concentrations	**	0.00E+00
8b. Level II Concentrations 8c. Potential Contamination	**	0.00E+00 7.70E+01
8d. Population (lines 8a+8b+8c)	**	7.70E+01
9. Resources	5	0.00E+00
10. Sensitive Environments 10a. Actual Contamination 10b. Potential Contamination 10c. Sens. Environments(lines 10a+10b) 11. Targets (lines 7+8d+9+10c)	* * * * * * * * * * *	0.00E+00 4.08E-01 4.08E-01 9.74E+01
AIR MIGRATION PATHWAY SCORE (Sa)	100	4.63E-01

^{*} Maximum value applies to waste characteristics category.



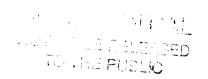
^{**} Maximum value not applicable.

^{***} No specific maximum value applies, see HRS for details.

PRESCORE 4.0 WASTE QUANTITY ASARCO - 08/04/97

1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Contaminated Soil

a.	Wastestream ID	
b.	Hazardous Constituent Quantity (C) (lbs.)	0.00
c.	Data Complete?	ИО
d.	Hazardous Wastestream Quantity (W) (lbs.)	0.00
e.	Data Complete?	ИО
f.	Wastestream Quantity Value (W/5,000)	0.00E+00



PRESCORE 4.0 WASTE QUANTITY ASARCO - 08/04/97

2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a.	Source ID	Contaminated Soil	
b.	Source Type	Contaminated Soil	
c.	Secondary Source Type	N.A.	
d.	Source Vol.(yd3/gal) Source Area (ft2)	0.00	1.00
e.	Source Volume/Area Value	2.94E-05	
f.	Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)	0.00E+00	
g.	Data Complete?	МО	
h.	Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)	0.00E+00	
i.	Data Complete?	NO	
k.	Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)	2.94E-05	

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Arsenic	< 2	ИО	0.0E+00	ppm
Benz(a)anthracene	< 2	NO	0.0E+00	mqq
Cadmium	< 2	NO	0.0E+00	ppm
Chrysene	< 2	ИО	0.0E+00	ppm
Copper	< 2	NO	0.0E+00	ppm
Fluoranthene	< 2	ИО	0.0E+00	ppm
Lead	< 2	NO	0.0E+00	ppm
Nickel	< 2	ИО	0.0E+00	ppm
Phenanthrene	< 2	ИО	0.0E+00	ppm
Pyrene	< 2	ИО	0.0E+00	ppm
Silver	< 2	NO	0.0E+00	ppm

Documentation for Source Type:

Analytical results indicate that soils are contaminated. Ref. 14,

PREScore 4.0 WASTE QUANTITY ASARCO - 08/04/97

pp. 3, 13 thru 16 of 67.

Documentation for Source Hazardous Substances:

Analytical results indicate elevated levels of Arsenic, Cadmium, Copper, Lead, Nickel, and PAHs. Ref. 14, pp. 2 thru 5, 14 thru 17, 40, 43, 46, 49 of 67. The analytical data was used for screening purposes since the data was not validated.

Documentation for Source Area:

The area of 1 square foot was estimated since the actual surface area is unknown.



PREScore 4.0 WASTE QUANTITY ASARCO - 08/04/97

3. SITE HAZARDOUS WASTE QUANTITY SUMMARY

			Constituent or	Hazardous
	Migration	Vol. or Area	Wastestream	Waste Qty.
No. Source ID	Pathways	Value (2e)	Value (2f,2h)	Value (2k)
1 Contaminated Soil	GW-SW-SE-A	2.94E-05	0.00E+00	2.94E-05



PREScore 4.0 WASTE QUANTITY ASARCO - 08/04/97

4. PATHWAY HAZARDOUS WASTE QUANTITY AND WASTE CHARACTERISTICS SUMMARY TABLE

Migration Pathway	Contaminant Value	es	HWQVs*	WCVs**
Ground Water	Toxicity/Mobility	1.00E+02	10	6
SW: Overland Flow, DW	Tox./Persistence	1.00E+04	10	18
SW: Overland Flow, HFC	Tox./Persis./Bioacc.	5.00E+07	10	100
SW: Overland Flow, Env	Etox./Persis./Bioacc.	5.00E+08	10	180
SW: GW to SW, DW	Tox./Persistence	1.00E+02	10	6
SW: GW to SW, HFC	Tox./Persis./Bioacc.	1.00E+05	10	32
SW: GW to SW, Env	Etox./Persis./Bioacc.	5.00E+04	10	18
Soil Exposure:Resident	Toxicity	1.00E+04	10	18
Soil Exposure: Nearby	Toxicity	1.00E+04	10	18
Air	Toxicity/Mobility	2.00E+00	10	2

* Hazardous Waste Quantity Factor Values

** Waste Characteristics Factor Category Values

Note: SW = Surface Water

GW = Ground Water

DW = Drinking Water Threat
HFC = Human Food Chain Threat
Env = Environmental Threat



PREScore 4.0 GROUND WATER PATHWAY AQUIFER SUMMARY ASARCO - 08/04/97

No. Aquifer ID	Туре	Overlaying No.	Inter- Connected with	Likelihood of Release	Targets
1 Terminal Moraine	Non K	0	0	460	0.00E+00
2 Farrington Sand	Non K	1	0	240	2.70E+01

Containment

No.	Source ID	HWQ Value	Containment Value
1	Contaminated Soil	2.94E-05	10
		ment Factor	10

Documentation for Ground Water Containment, Source Contaminated Soil:

There is no liner under contaminated soil, and there is no cover over the soil. Ref. 14, p. 2 of 67.

Net Precipitation

Net Precipitation (inches)

N.A.



PREScore 4.0 GROUND WATER PATHWAY LIKELIHOOD OF RELEASE Terminal Moraine AQUIFER ASARCO - 08/04/97

Aquifer: Terminal Moraine

Type of Aquifer: Non Karst

Overlaying Aquifer: 0

Interconnected with: 0

Documentation for Terminal Moraine Aquifer:

The terminal moraine ranges in thickness under the site from 0 to 40 feet and is composed of red clay, sand, gravel, and boulders. Ref. 5, pp. 11, 72 of 89.

OBSERVED RELEASE

			Distance	
No.	Well ID	Well Type	(miles)	Level of Contamination

- N/A and/or data not specified

Observed Release Factor

0



6

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GROUND WATER PATHWAY LIKELIHOOD OF RELEASE Terminal Moraine AQUIFER

ASARCO - 08/04/97

POTENTIAL TO RELEASE

Containment

Containment Factor 10 Net Precipitation Net Precipitation Factor

Depth to Aquifer

A. Depth of Hazardous Substances 0.50 feet

Documentation for Depth of Hazardous Substances:

Soil samples were obtained from 0 to 6". Ref. 14, p. 2 of 67.

0.00 feet B. Depth to Aquifer from Surface

Documentation for Depth to Aquifer from Surface :

The depth to the Terminal Moraine layer is between 0 and 40 feet. Ref. 5, pp. 11, 72 of 89; Ref. 19, pp. 4, and 5 of 14.

0.00 feet C. Depth to Aquifer (B - A) 5 Depth to Aquifer Factor

Travel Time

ИО Are All Layers Karst?

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GROUND WATER PATHWAY LIKELIHOOD OF RELEASE Terminal Moraine AQUIFER ASARCO - 08/04/97

Documentation for Karst Layers:

The terminal moraine consists of red clay and is not considered to be Karst. Ref. 19, pp. 2 thru 14 of 14.

Thickness of Layer(s) with Lowest Conductivity 0.00 feet

Documentation for Thickness of Layers with Lowest Conductivity:

The terminal moraine exists at the surface in some areas of the site since the thickness ranges from 0 to 40 feet below the ground surface. Ref. 19, pp. 2 thru 14 of 14.

Hydraulic Conductivity (cm/sec)

0.0E-00

Documentation for Hydraulic Conductivity:

There are no layers between the terminal moraine and the ground surface. Ref. 19, pp. 2 thru 14 of 14.

Travel Time Factor

35

Potential to Release Factor 460

PREScore 4.0 GROUND WATER PATHWAY LIKELIHOOD OF RELEASE Farrington Sand AQUIFER ASARCO - 08/04/97

Aquifer: Farrington Sand

Type of Aquifer: Non Karst

Overlaying Aquifer: 1

Interconnected with: 0

Documentation for Farrington Sand Aquifer:

The Farrington sand aquifer consists of coarse to fine-grained sand and is approximately 25 feet thick. This aquifer is underlain by the Raritan Fire Clay which overlies bedrock. Ref. 22, pp. 14, and 16 of 30.

OBSERVED RELEASE

No. Well ID Well Type Distance (miles) Level of Contamination

- N/A and/or data not specified

Observed Release Factor

0



PREScore 4.0

GROUND WATER PATHWAY LIKELIHOOD OF RELEASE Farrington Sand AQUIFER

ASARCO - 08/04/97

POTENTIAL TO RELEASE

Containment

Containment Factor

10

Net Precipitation

Net Precipitation Factor

6

Depth to Aquifer

A. Depth of Hazardous Substances

0.50 feet

Documentation for Depth of Hazardous Substances:

Soil samples were obtained from 0 to 6". Ref. 14, p. 2 of 67,

B. Depth to Aquifer from Surface

70.00 feet

Documentation for Depth to Aquifer from Surface :

The depth to the Farrington Sand is approximately 70 feet below the ground surface. Ref. 5, p. 12 of 89.

C. Depth to Aquifer (B - A)

69.50 feet

Depth to Aquifer Factor

3

Travel Time

Are All Layers Karst?

NO

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PREScore 4.0 GROUND WATER PATHWAY LIKELIHOOD OF RELEASE Farrington Sand AQUIFER ASARCO - 08/04/97

Documentation for Karst Layers:

The Farrignton Sand Aquifer is not described as being Karst. Ref. 22, p. 16 of 30.

Thickness of Layer(s) with Lowest Conductivity 70.00

feet

Documentation for Thickness of Layers with Lowest Conductivity:

Both the terminal moraine and Woodbridge Clay lie above the Farrington Sand at a combined thickness of 70 feet. Ref. 19, p. 8 of 14; Ref. 5, pp. 11, 72 of 89; Ref. 21, p. 5 of 5.

Hydraulic Conductivity (cm/sec)

1.0E-07

Documentation for Hydraulic Conductivity:

The hydraulic conductivity of the Woodbridge Clay is 10x-7 cm/sec. Ref. 19, p. 8 of 14; Ref. 5, pp. 11, 72 of 89; Ref. 21, p. 5 of 5.

Travel Time Factor

15

240

Potential to Release Factor



PREScore 4.0 GROUND WATER PATHWAY WASTE CHARACTERISTICS ASARCO - 08/04/97

Source: 1 Contaminated Soil

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
Arsenic	10000	1.00E-02	1.00E+02
Benz(a)anthracene	1000	2.00E-07	2.00E-04
Cadmium	10000	2.00E-03	2.00E+01
Chrysene	10	2.00E-07	2.00E-06
Copper	0	1.00E-02	0.00E+00
Fluoranthene	100	2.00E-05	2.00E-03
Lead	10000	2.00E-05	2.00E-01
Nickel	10000	2.00E-05	2.00E-01
Phenanthrene	0	2.00E-03	0.00E+00
Pyrene	100	2.00E-05	2.00E-03
Silver	100	2.00E-05	2.00E-03



PREScore 4.0 GROUND WATER PATHWAY WASTE CHARACTERISTICS ASARCO - 08/04/97

Hazardous Substances Found in an Observed Release

Well Observed Release Toxicity Mobility Toxicity/
No. Hazardous Substance Value Value Mobility
Value



⁻ N/A and/or data not specified

PREScore 4.0 GROUND WATER PATHWAY TARGETS FOR AQUIFER Terminal Moraine ASARCO - 08/04/97

Toxicity/Mobility Value from Source Hazardous Substances:	1.00E+02
Toxicity/Mobility Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Mobility Factor:	1.00E+02
Sum of Source Hazardous Waste Quantity Values:	2.94E-05
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	6



PREScore 4.0 GROUND WATER PATHWAY TARGETS FOR AQUIFER Terminal Moraine ASARCO - 08/04/97

Population by Well

No. Well ID Sample Type Distance Level of (miles) Contamination Population

- N/A and/or data not specified

Level I Population Factor: 0.00

Level II Population Factor: 0.00



PREScore 4.0 GROUND WATER PATHWAY TARGETS FOR AQUIFER Terminal Moraine ASARCO - 08/04/97

Potential Contamination by Distance Category

Distance Category (miles)	Population	Value
> 0 to 1/4	0.0	0.00E+00
> 1/4 to 1/2	0.0	0.00E+00
> 1/2 to 1	0.0	0.00E+00
> 1 to 2	0.0	0.00E+00
> 2 to 3	0.0	0.00E+00
> 3 to 4	0.0	0.00E+00

Potential Contamination Factor:

0.000

Nearest Well

Level of Contamination: N.A.

Nearest Well Factor: 0.00E+00

Resources

Resource Use: NO

Resource Factor: 0.00E+00

Documentation for Resources:

Groundwater is not known to be used as a resource within 4 miles of the site. Ref. 27, p. 1 of 1; Ref. 28, p. 1 of 1; Ref. 29, p. 1 of 1; Ref. 30, p. 1 of 1; Ref. 31, p. 1 of 1; Ref. 32, p. 1 of 1.

Wellhead Protection Area

No wellhead protection area

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PREScore 4.0 GROUND WATER PATHWAY TARGETS FOR AQUIFER Terminal Moraine ASARCO - 08/04/97

Wellhead Protection Area Factor: 0.00E+00

Documentation for Wellhead Protection Area:

There is no designated wellhead protection area within 4 miles of the site. Ref. 26, p. 1 of 1.



PREScore 4.0 GROUND WATER PATHWAY TARGETS FOR AQUIFER Farrington Sand ASARCO - 08/04/97

Population by Well

No. Well ID Sample Type Distance Level of (miles) Contamination Population

- N/A and/or data not specified

Level I Population Factor: 0.00

Level II Population Factor: 0.00



PREScore 4.0 GROUND WATER PATHWAY TARGETS FOR AQUIFER Farrington Sand ASARCO - 08/04/97

Potential Contamination by Distance Category

Distance Category (miles)	Population	Value	
> 0 to 1/4	0.0	0.00E+00	
> 1/4 to 1/2	0.0	0.00E+00	
> 1/2 to 1	40.0	1.70E+00	
> 1 to 2	121.0	3.00E+00	
> 2 to 3	14.0	2.00E-01	
> 3 to 4	402.0	4.20E+00	

Potential Contamination Factor:

9.000

Documentation for Target Population > 0 to 1/4 mile Distance Category:

No well use between 0 and 0.25 miles. Ref. 23, pp. 18, 19, 27, 28 of 28.

Documentation for Target Population > 1/4 to 1/2 mile Distance Category:

No known groundwater use between 0.25 miles and 0.5 miles. Ref.
23, pp. 18, 19, 27, 28 of 28.

Documentation for Target Population > 1/2 to 1 mile Distance Category:

40 persons use wells between 0.5 and 1 mile from the site. Ref.
23, pp. 18, 19, 27, 28 of 28. The wells are screened in the
Farrington Sand aguifer. Re. 25, pp. 6, 9, 10, of 17.

Documentation for Target Population > 1 to 2 miles Distance Category:

121 persons use wells in the 1 to 2 mile radius. Ref. 23, pp. 18, 19, 27, 28 of 28. The wells are screened in the Farrington Sand aquifer. Ref. 25, pp. 6, 9, 10 of 17.

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PREScore 4.0 GROUND WATER PATHWAY TARGETS FOR AQUIFER Farrington Sand ASARCO - 08/04/97

Documentation for Target Population > 2 to 3 miles Distance Category:

14 persons use wells in the 2 to 3 mile radius. Ref. 23, pp. 18, 19, 27, 28 of 28. The wells are screened in the Farrighton Sand Aquifer. Ref. 25, pp. 6, 9, 10 of 17.

Documentation for Target Population > 3 to 4 miles Distance Category:

402 persons use wells within 3 and 4 miles of the site. Ref. 23, pp. 18, 19, 27, 28 of 28. The wells are screened in the Farrington Sand aquifer. Ref. 25, pp. 6, 9, 10 of 17.

Nearest Well

Level of Contamination: Potential

Distance in miles: 0.50

Nearest Well Factor: 1.80E+01

Documentation for Nearest Well:

There are no known groundwater users within 0.5 miles of the site. Ref. 23, pp. 1 thru 6 of 6; Ref. 24, pp. 1 and 2 of 2; Ref. 25, pp. 1 thru 17 of 17.

Resources

Resource Use: NO

Resource Factor: 0.00E+00

Documentation for Resources:

Groundwater is not known to be used as a resource within 4 miles of the site. Ref. 27, p. 1 of 1; Ref. 28, p. 1 of 1; Ref. 29, p. 1 of 1; Ref. 30, p. 1 of 1; Ref. 31, p. 1 of 1; Ref. 32, p. 1 of 1.

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PREScore 4.0 GROUND WATER PATHWAY TARGETS FOR AQUIFER Farrington Sand ASARCO - 08/04/97

Wellhead Protection Area

No wellhead protection area

Wellhead Protection Area Factor: 0.00E+00

Documentation for Wellhead Protection Area:

There are no designated wellhead protection areas within 4 miles of the site. Ref. 26, p. 1 of 1.



PREScore 4.0 SURFACE WATER PATHWAY SEGMENT SUMMARY ASARCO - 08/04/97

No. Segment ID	Segment Type	Water Type	Start Point (mi)	End Point (mi)	Average Flow (cfs)
1 Arthur Kill	Coastal Ti		0.00	3.00	N.A.
2 Raritan Bay	Coastal Ti	Salt	3.00	11.00	N.A.
3 Kill Van Kull&Newar	Coastal Ti	Salt	11.00	15.00	N.A.

Documentation for segment: Arthur Kill:

The Arthur Kill is tidally influenced and joins the Raritan River 3 miles away and the Kill Van Kull and Newark Bay 11 miles away. Ref. 35, p. 1 of 1.

Documentation for segment: Raritan Bay:

The Raritan River and Raritan Bay are tidally influenced from 3 miles to 15 miles from the PPE. Ref. 35, p. 1 of 1.

Documentation for segment: Kill Van Kull&Newar:

Newark Bay and the Arthur Kill are tidally influenced from 11 to 15 miles from the PPE. Ref. 35, p. 1 of 1.



PRESCORE 4.0 SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE ASARCO - 08/04/97

OBSERVED RELEASE

No. Sample ID Sample Type Distance Level of Contamination (miles) DW HFC Env

- N/A and/or data not specified

Observed Release Factor

0



PREScore 4.0

SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE ASARCO - 08/04/97

POTENTIAL TO RELEASE

Potential to Release by Overland Flow

Containment

No.	Source ID	HWQ Value	Containment Value
1	Contaminated Soil	2.94E-05	10
====	E		=

Containment Factor: 10

Documentation for Overland Flow Containment, Source Contaminated Soil:

No containment exists for the contaminated soil. Ref. 13, p. 2 of

3.



PREScore 4.0

SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE

ASARCO - 08/04/97

Distance to Surface Water

Distance to Surface Water:

0.0 feet

Distance to Surface Water Factor:

25

Documentation for Distance to surface Water:

The site lies adjacent to the Arthur Kill. Ref. 5, p. 9 of 89.

Runoff

A. Drainage Area:

68.0 acres

Documentation for Drainage Area:

The size of the ASARCO site is 68 acres. Ref. 3, p. 1 of 17; Ref. 4, p. 1 of 6.

B. 2-year, 24-hour Rainfall:

3.3 inches

Documentation for Rainfall:

The 2-year 24-hour rainfall is 3.3 inches. Ref. 37, p. 2 of 2.

C. Soil Group: C Moderately-fine textured soils with low infiltration rates

Documentation for Soil Group:

Unpaved portions of the site are either slag or ash fill, or clay and sand soils. Ref. 5, pp. 10, 71 of 89; Ref. 19, pp. 4, 5 of 14.

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PREScore 4.0 SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE ASARCO - 08/04/97

Runoff Fa	ctor:			2	
	=======================================		=======================================		=======
Potential	to Release	by Overland	Flow Factor:	270	

PREScore 4.0 SURFACE WATER PATHWAY OVERLAND FLOW/FLOOD COMPONENT LIKELIHOOD OF RELEASE

ASARCO - 08/04/97

Potential to Release by Flood

No.	Source ID	HWQ Value	Flood Containment Value	Flood Frequency Value	Potential to Release by Flood
1	Contaminated Soil	2.94E-05	10	25	250
		=======================================			

Potential to Release by Flood Factor: 250

Documentation for Flood Containment, Source Contaminated Soil:

There is no containment for any type of flood. Ref. 13, pp. 1 thru 3 of 3.

Documentation for Flood Frequency, Source Contaminated Soil:

Contaminated soil at the site lies within and between the 100-year and 500-year flood zones. Ref. 33, pp. 1 thru 3 of 3.

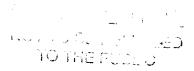


PREScore 4.0 SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Source: 1 Contaminated Soil

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
Arsenic	10000	1.00E+00	1.00E+04
Benz(a)anthracene	1000	1.00E+00	1.00E+03
Cadmium	10000	1.00E+00	1.00E+04
Chrysene	10	1.00E+00	1.00E+01
Copper	0	1.00E+00	0.00E+00
Fluoranthene	100	1.00E+00	1.00E+02
Lead	10000	1.00E+00	1.00E+04
Nickel	10000	1.00E+00	1.00E+04
Phenanthrene	0	1.00E+00	0.00E+00
Pyrene	100	1.00E+00	1.00E+02
Silver	100	1.00E+00	1.00E+02



PREScore 4.0 SW PATHWAY: OVERLAND/FLOOD DRINKING WATER THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Hazardous Substances Found in an Observed Release

Sample Observed Release No. Hazardous Substance

Value

Toxicity Persistence Toxicity/ Value

Persistence

Value



⁻ N/A and/or data not specified

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS ASARCO - 08/04/97

Toxicity/Persistence Value from Source Hazardous Substances:	1.00E+04
Toxicity/Persistence Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Persistence Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	2.94E-05
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	18



SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS ASARCO - 08/04/97

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

- N/A and/or data not specified



PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS ASARCO - 08/04/97

Level I Concentrations

Intake

Distance Along the

In-water Segment from the

Probable Point of Entry (miles) Population

- N/A and/or data not specified

Population Served by Level I Intakes:

0.0

Level I Population Factor: 0.00E+00

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS ASARCO - 08/04/97

Level II Concentrations

Distance Along the In-water Segment from the

Intake Probable Point of Entry (miles) Population

- N/A and/or data not specified

Population Served by Level II Intakes:

0.0

Level II Population Factor: 0.00E+00

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS ASARCO - 08/04/97

Potential Contamination

Intake ID

Average Annual Flow (cfs)

Population Served

- N/A and/or data not specified

Documentation for Intake :

No surface water intakes within TDL. Ref. 36, p. 1 of 1.

Type of Surface Water Body

Total Population Dilution-Weighted Population

- N/A and/or data not specified

Dilution-Weighted Population Served

by Potentially Contaminated Intakes:

Potential Contamination Factor:

0.0

0.0

Nearest Intake

Location of Nearest Drinking Water Intake: N.A.

Nearest Intake Factor: 0.00

Resources

Resource Use: NO

Resource Value: 0.00E+00

Documentation for Resources:

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT DRINKING WATER THREAT TARGETS
ASARCO - 08/04/97

None of the surface water bodies within the TDL are classified as being suitable as a source of potable, industrial, or agricultural supply. Ref. 34, pp. 3, 4 of 13; Ref. 35, p. 1 of 1.

PREScore 4.0
SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS
ASARCO - 08/04/97

Source: 1 Contaminated Soil

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value	Persistence Value	Bio- accum. Value	Toxicity/ Persistence/ Bioaccum. Value
Arsenic	10000	1.00E+00	5.00E+02	5.00E+06
Benz(a)anthracene	1000	1.00E+00	5.00E+04	5.00E+07
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Chrysene	10	1.00E+00	5.00E+02	5.00E+03
Copper	0	1.00E+00	5.00E+04	0.00E+00
Fluoranthene	100	1.00E+00	5.00E+03	5.00E+05
Lead	10000	1.00E+00	5.00E+03	5.00E+07
Nickel	10000	1.00E+00	5.00E+02	5.00E+06
Phenanthrene	0	1.00E+00	5.00E+01	0.00E+00
Pyrene	100	1.00E+00	5.00E+03	5.00E+05
Silver	100	1.00E+00	5.00E+01	5.00E+03

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PRESCORE 4.0 SW PATHWAY: OVERLAND/FLOOD HUMAN FOOD CHAIN THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Hazardous Substances Found in an Observed Release

Sample Observed Release
No. Hazardous Substance

Toxicity Persistence Bio-Value Value accum

Bio- Persistence/ Bioaccum. Value Value

- N/A and/or data not specified



SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS ASARCO - 08/04/97

Toxicity/Persistence/Bioaccumulation Value from Source Hazardous Substances:	5.00E+07
Toxicity/Persistence/Bioaccumulation Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Persistence/Bioaccumulation Factor:	5.00E+07
Sum of Source Hazardous Waste Quantity Values:	2.94E-05
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	100



SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS
ASARCO - 08/04/97

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

- N/A and/or data not specified

Turner (Construction)

PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS
ASARCO - 08/04/97

Level I Concentrations

Annual Production (pounds)

Human Food Chain Population Value

- N/A and/or data not specified

Sum of Human Food Chain Population Values: 0.00E+00

Level I Concentrations Factor: 0.00E+00

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS ASARCO - 08/04/97

Level II Concentrations

Fishery

Annual Production (pounds)

Human Food Chain Population Value

- N/A and/or data not specified

Sum of Human Food Chain Population Values: 0.00E+00

Level II Concentrations Factor: 0.00E+00

PREScore 4.0 SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS ASARCO - 08/04/97

Potential Contamination

Fi	shery	Annnual Production (pounds)	Type of Surface Water Body	Average Annual Flow (cfs)	Pop. Value (Pi)	Dilution Weight (Di)	Pi*Di
1	Arthur Kill	1.0	Coastal	0	0.0	1.00E-04	3.00E-06
2	Raritan Bay	1.0	Coastal	0	0.0	1.00E-04	3.00E-06
3	Kill Van Kull&Newa	1.0	Coastal	0	0.0	1.00E-04	3.00E-06

Sum of (Pi*Di): 9.00E-06

Potential Human Food Chain Contamination Factor: 9.00E-07

Documentation for Arthur Kill Fishery:

A default value of 1 lb. per year was assigned since the exact location of fishery production was not identified. Ref. 40, p. 2 of 2.

Documentation for Raritan Bay Fishery:

A default value of 1 lb. per year was assigned since the actual location of fish production was not assigned. Ref. 40, p. 2 of 2.

Documentation for Kill Van Kull&Newar Fishery:

A default value of 1 lb. per year was assigned since the exact location of the fishery is unknown. Ref. 40, p. 2 of 2.

Food Chain Individual

Location of Nearest Fishery: Arthur Kill

Distance from the Probable Point of Entry: 0.00 miles

Type of Surface Water Body: Coastal Tidal Area

Dilution Weight: 0.0001000



SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT HUMAN FOOD CHAIN THREAT TARGETS ASARCO - 08/04/97

Level of Contamination: Potential

Food Chain Individual Factor: 0.00

Documentation for Arthur Kill:

The Arthur Kill is tidally influenced and joins the Raritan River 3 miles away and the Kill Van Kull and Newark Bay 11 miles away. Ref. 35, p. 1 of 1.



PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD ENVIRONMENTAL THREAT WASTE CHARACTERISTICS

ASARCO - 08/04/97

Source: 1 Contaminated Soil

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Eco- toxicity Value	Persistence Value	Bio- accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
Arsenic	100	1.00E+00	5.00E+02	5.00E+04
Benz(a)anthracene	10000	1.00E+00	5.00E+04	5.00E+08
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Chrysene	1000	1.00E+00	5.00E+02	5.00E+05
Copper	100	1.00E+00	5.00E+04	5.00E+06
Fluoranthene	1000	1.00E+00	5.00E+03	5.00E+06
Lead	1000	1.00E+00	5.00E+03	5.00E+06
Nickel	1000	1.00E+00	5.00E+02	5.00E+05
Phenanthrene	1000	1.00E+00	5.00E+01	5.00E+04
Pyrene	10000	1.00E+00	5.00E+03	5.00E+07
Silver	10000	1.00E+00	5.00E+01	5.00E+05



PREScore 4.0 SW PATHWAY: OVERLAND FLOW/FLOOD ENVIRONMENTAL THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Hazardous Substances Found in an Observed Release

Sample Observed Release No. Hazardous Substance

Eco-Value

toxicity Persistence Bio-Value accum.

Ecotoxicity/ Persistence/ Bioaccum.

Value Value

⁻ N/A and/or data not specified

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Hazardous Substances:	5.00E+08
Ecotoxicity/Persistence/Bioaccummulation Value from Observed Release Hazardous Substances:	0.00E+00
Ecotoxicity/Persistence/Bioaccummulation Factor:	5.00E+08
Sum of Source Hazardous Waste Quantity Values:	2.94E-05
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	180



SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

- N/A and/or data not specified

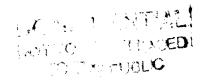


SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Level I Concentrations

Sensitive Environment	Distance from Point of Entry Sensitive Env.	to Envi	sitive ronment e
- N/A and/or data not s	pecified		
Sum of Sensitive Environme	nts Values:	0	
Wetlands			
Point	nce from Probable of Entry to nd (miles)	Wetlands Frontage	(miles)
- N/A and/or data not s	pecified		
Total Wetlands Frontage:	0.00 Miles	Total Wetlands Va	lue: 0
Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00			

Level I Concentrations Factor: 0.00E+00

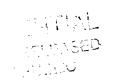


SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Level II Concentrations

Sensitive Environment	Distance from Deposit Point of Entry Sensitive Env.	to Environm	=
- N/A and/or data not s	pecified		
Sum of Sensitive Environme	ents Values:	0	The state of the s
Wetlands			
Point	nce from Probable of Entry to and (miles)	Wetlands Frontage (mile	:s)
- N/A and/or data not s	specified		
Total Wetlands Frontage:	0.00 Miles	Total Wetlands Value:	0
Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00			

Level II Concentrations Factor: 0.00E+00



SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Potential Contamination

Sensitive Environments

Type of Surface Water Body Se	nsitive Environment	Sensitive Environment Value	
Coastal Tidal Area	1 Perigrin Falcon	50	
Coastal Tidal Area	2 Least Tern	50	
Coastal Tidal Area	3 Yellow Crowned Nigh	50	

Wetlands

Type of Surface Water Body	Sensitive Environment	Wetlands Frontage	Wetlands Value	
Coastal Tidal Are Coastal Tidal Are Coastal Tidal Are	a 6 wetlands	10.00 25.00 5.00	250 500 150	

Documentation for Sensitive Environment Perigrin Falcon:

Records of Perigrin Falcon use within 15 miles of the site along the surface water pathway. Ref. 39, pp. 4, 8, 9 of 32.

Documentation for Sensitive Environment Least Tern:

The Least Tern which is a State Endangered species frequents areas along the TDL. Ref. 39, pp. 4, 8, 9 of 32.

Documentation for Sensitive Environment Yellow Crowned Nigh:



PREScore 4.0

SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS
ASARCO - 08/04/97

The State Treatened Yellow-Crowned Night Heron has been reported along the TDL. Ref. 39, pp. 4, 8, 9 of 32.

Documentation for Sensitive Environment wetlands:

It is estimated that there are 10 miles of wetland frontage along the tidal portions of the Raritan River and Raritan Bay. Ref. 38, p. 1 of 1.

Documentation for Sensitive Environment wetlands:

It is estimated that there are 25 miles of wetland frontage along the Arthur Kill. Ref. 38, p. 1 of 1.

Documentation for Sensitive Environment wetlands:

It is estimated that there are five miles of wetland frontage along the Kill Van Kull and Newark Bay within the TDL. Ref. 38, p. 1 of 1.

PREScore 4.0 SW PATHWAY: OVERLAND FLOW/FLOOD COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Type of Surface Water Body	Sum of Sens. Environment Values(Sj)	Sum of Wetland Frontage Values(Wj	Dilution Weight) (Dj)	Dj(Wj+Sj)
Coastal Tidal Waters	150	500	1.00E-04	6.50E-02
	Su	Sum of Dj m of Dj(Wj		6.50E-02 6.50E-03
Potontial Contami	nation Sensit	ivo Enviro	nment Fact	or: 7 00F-03

Potential Contamination Sensitive Environment Factor: 7.00E-03

PREScore 4.0 SURFACE WATER PATHWAY GW TO SW CONTAINMENT SUMMARY ASARCO - 08/04/97

Containment

No.	Source ID	HWQ Value	Containment	Value
1	Contaminated So	il 2.94E-05	10	
			1.0	
	Cont	ainment Factor	10	

Documentation for Ground Water Containment, Source Contaminated Soil:

There is no liner under contaminated soil, and there is no cover over the soil. Ref. 14, p. 2 of 67.

Net Precipitation

Net Precipitation (inches)

0.00



PREScore 4.0

SURFACE WATER PATHWAY GW TO SW COMPONENT LIKELIHOOD OF RELEASE ASARCO - 08/04/97

Aquifer: Terminal Moraine

Type of Aquifer: Non Karst

Overlaying Aquifer: 0

Interconnected with: 0

Documentation for Terminal Moraine Aquifer:

The terminal moraine ranges in thickness under the site from 0 to 40 feet and is composed of red clay, sand, gravel, and boulders. Ref. 5, pp. 11, 72 of 89.

OBSERVED RELEASE

			Distance			
No.	Well ID	Well Type	(miles)	Level	of	Contamination

- N/A and/or data not specified

Observed Release Factor

0



PREScore 4.0

SURFACE WATER PATHWAY GW TO SW COMPONENT LIKELIHOOD OF RELEASE ASARCO - 08/04/97

POTENTIAL TO RELEASE

Ground Water to Surface Water Angle

Probable Point of Entry 0.00 miles
Angle Theta 90

Documentation for Ground to Surface Water PPE and Angle Theta:

The site lies perpendicular to the Arthur KIll. Ref. 5, p. 68 of 89.

Containment

10
6

Documentation for Depth of Hazardous Substances:

A. Depth of Hazardous Substances

Soil samples were obtained from 0 to 6". Ref. 14, p. 2 of 67.

B. Depth to Aquifer from Surface 0.00 feet



0.50 feet

PREScore 4.0

SURFACE WATER PATHWAY GW TO SW COMPONENT LIKELIHOOD OF RELEASE ASARCO - 08/04/97

Documentation for Depth to Aquifer from Surface :

The depth to the Terminal Moraine layer is between 0 and 40 feet. Ref. 5, pp. 11, 72 of 89; Ref. 19, pp. 4, and 5 of 14.

C. Depth to Aquifer (B - A)

0.00 feet

Depth to Aquifer Factor

Travel Time

Are All Layers Karst?

NO

Documentation for Karst Layers:

The terminal moraine consists of red clay and is not considered to be Karst. Ref. 19, pp. 2 thru 14 of 14.

Thickness of Layer(s) with Lowest Conductivity 0.00 feet

Documentation for Thickness of Layers with Lowest Conductivity:

The terminal moraine exists at the surface in some areas of the site since the thickness ranges from 0 to 40 feet below the ground surface. Ref. 19, pp. 2 thru 14 of 14.

Hydraulic Conductivity (cm/sec)

0.0E-00

Documentation for Hydraulic Conductivity:

There are no layers between the terminal moraine and the ground surface. Ref. 19, pp. 2 thru 14 of 14.

Travel Time Factor

35

460

PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

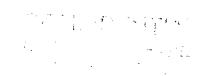
PREScore 4.0

SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Source: 1 Contaminated Soil

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicit Factor Value		Mobility Value	Toxicity/ Mobililty/ Persistence
Arsenic	10000	1.00E+00	1.00E-02	1.00E+02
Benz(a)anthracene	1000	1.00E+00	2.00E-07	2.00E-04
Cadmium	10000	1.00E+00	2.00E-03	2.00E+01
Chrysene	10	1.00E+00	2.00E-07	2.00E-06
Copper	0	1.00E+00	1.00E-02	0.00E+00
Fluoranthene	100	1.00E+00	2.00E-05	2.00E-03
Lead	10000	1.00E+00	2.00E-05	2.00E-01
Nickel	10000	1.00E+00	2.00E-05	2.00E-01
Phenanthrene	0	1.00E+00	2.00E-03	0.00E+00
Pyrene	100	1.00E+00	2.00E-05	2.00E-03
Silver	100	1.00E+00	2.00E-05	2.00E-03



PREScore 4.0

SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Hazardous Substances Found in an Observed Release

Observed Release

Toxicity

Persist.

Hazardous Substance Factor Value Value

Toxicity/
Persistence

- N/A and/or data not specified



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT TARGETS ASARCO - 08/04/97

Toxicity/Mobility/Persistence Value from Source Hazardous Substances:	1.00E+02
Toxicity/Mobility/Persistence Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Mobility/Persistence Factor:	1.00E+02
Sum of Source Hazardous Waste Quantity Values:	2.94E-05
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	6

PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT TARGETS ASARCO - 08/04/97

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

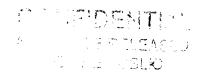
- N/A and/or data not specified

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

- N/A and/or data not specified



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT TARGETS ASARCO - 08/04/97

Level I Concentrations

Distance Along the In-water Segment from the

Intake

Probable Point of Entry (miles) Population

- N/A and/or data not specified

Population Served by Level I Intakes: 0.0

Level I Population Factor: 0.00E+00



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT TARGETS ASARCO - 08/04/97

Level II Concentrations

Distance Along the In-water Segment from the

Intake Probable Point of Entry (miles) Population

- N/A and/or data not specified

Population Served by Level II Intakes: 0.0

Level II Population Factor: 0.00E+00



PREScore 4.0

SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT TARGETS
ASARCO - 08/04/97

Potential Contamination

Intake ID

Average Annual Flow (cfs)

Population Served

- N/A and/or data not specified

Documentation for Intake :

No surface water intakes within TDL. Ref. 36, p. 1 of 1.

Type of Surface Water Body

Total Population

Dilution-Weighted Population

- N/A and/or data not specified

Dilution-Weighted Population Served

by Potentially Contaminated Intakes:

0.0

Potential Contamination Factor:

0.0

Nearest Intake

Location of Nearest Drinking Water Intake: N.A.

Nearest Intake Factor: 0.00

Resources

Resource Use: NO

Resource Value: 0.00E+00

Documentation for Resources:

PER LE LE MITTAL PRÉSIDENTE PUELLO

PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT DRINKING WATER THREAT TARGETS ASARCO - 08/04/97

None of the surface water bodies within the TDL are classified as being suitable as a source of potable, industrial, or agricultural supply. Ref. 34, pp. 3, 4 of 13; Ref. 35, p. 1 of 1.

PREScore 4.0

SW PATHWAY: GW TO SW COMPONENT HUMAM FOOD CHAIN THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Source: 1 Contaminated Soil

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	•	Persist. Value	Mobility Value	Bio- accum. Value	Tox./Mobil./ Persistence/ Bioaccum. Value
Arsenic	10000	1.00E+00	1.00E-02	5.00E+02	5.00E+04
Benz(a)anthracene	1000	1.00E+00	2.00E-07	5.00E+04	1.00E+01
Cadmium	10000	1.00E+00	2.00E-03	5.00E+03	1.00E+05
Chrysene	10	1.00E+00	2.00E-07	5.00E+02	1.00E-03
Copper	0	1.00E+00	1.00E-02	5.00E+04	0.00E+00
Fluoranthene	100	1.00E+00	2.00E-05	5.00E+03	1.00E+01
Lead	10000	1.00E+00	2.00E-05	5.00E+03	1.00E+03
Nickel	10000	1.00E+00	2.00E-05	5.00E+02	1.00E+02
Phenanthrene	0	1.00E+00	2.00E-03	5.00E+01	0.00E+00
Pyrene	100	1.00E+00	2.00E-05	5.00E+03	1.00E+01
Silver	100	1.00E+00	2.00E-05	5.00E+01	1.00E-01

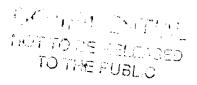


PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT HUMAM FOOD CHAIN THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Hazardous Substances Found in an Observed Release

Observed Release Hazardous Substance Toxicity Persist. Bio-Value Value accum. Value Toxicity/
Persistence
Bioaccum.
Value

- N/A and/or data not specified



PREScore 4.0

SW PATHWAY: GW TO SW COMPONENT HUMAN FOOD CHAIN THREAT TARGETS ASARCO - 08/04/97

Hazardous Substances:	1.00E+05
Toxicity/Mobility/Persistence/Bioaccumulation Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Mobility/Persistence/Bioaccumulation Factor:	1.00E+05
Sum of Source Hazardous Waste Quantity Values:	2.94E-05
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	32



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT HUMAN FOOD CHAIN THREAT TARGETS ASARCO - 08/04/97

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

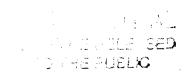
- N/A and/or data not specified

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

- N/A and/or data not specified



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT HUMAN FOOD CHAIN THREAT TARGETS ASARCO - 08/04/97

Level I Concentrations

Annual Production Human Food Chain (pounds) Population Value

- N/A and/or data not specified

Sum of Human Food Chain Population Values: 0.00E+00

Level I Concentrations Factor: 0.00E+00



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT HUMAN FOOD CHAIN THREAT TARGETS ASARCO - 08/04/97

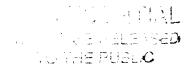
Level II Concentrations

Annual Production Human Food Chain Population Value

- N/A and/or data not specified

Sum of Human Food Chain Population Values: 0.00E+00

Level II Concentrations Factor: 0.00E+00



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT HUMAN FOOD CHAIN THREAT TARGETS ASARCO - 08/04/97

Potential Contamination

Fishery	Annnual Production (pounds)	Type of Surface Water Body	Average Annual Flow (cfs)	Pop. Value (Pi)	Dilution Weight (Di)	Pi*Di
1 Arthur Kill 2 Raritan Bay 3 Kill Van Kull&New	1.0	Coastal Coastal Coastal	0 0 0	0.0	2.00E-05 2.00E-05 2.00E-05	6.00E-07

Sum of (Pi*Di): 1.80E-06

Potential Human Food Chain Contamination Factor: 1.80E-07

Documentation for Arthur Kill Fishery:

A default value of 1 lb. per year was assigned since the exact location of fishery production was not identified. Ref. 40, p. 2 of 2.

Documentation for Raritan Bay Fishery:

A default value of 1 lb. per year was assigned since the actual location of fish production was not assigned. Ref. 40, p. 2 of 2.

Documentation for Kill Van Kull&Newar Fishery:

A default value of 1 lb. per year was assigned since the exact location of the fishery is unknown. Ref. 40, p. 2 of 2.

Food Chain Individual

Location of Nearest Fishery: Arthur Kill

Distance from the Probable Point of Entry: 0.00 miles

Type of Surface Water Body: Coastal Tidal Area

Dilution Weight: 0.0000200



PREScore 4.0

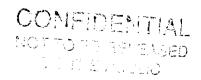
SW PATHWAY: GW TO SW COMPONENT HUMAN FOOD CHAIN THREAT TARGETS ASARCO - 08/04/97

Level of Contamination: Potential

Food Chain Individual Factor: 0.00

Documentation for Arthur Kill:

The Arthur Kill is tidally influenced and joins the Raritan River 3 miles away and the Kill Van Kull and Newark Bay 11 miles away. Ref. 35, p. 1 of 1.



PREScore 4.0

SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Source: 1 Contaminated Soil

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance		Persist. Value	Mob. Value	Bio- accum. Value	Ecotoxicity/ Mobility/ Persistence/ Bioaccum. Value
Arsenic	100	1.00E+00	1.00E-02	5.00E+02	5.00E+02
Benz(a)anthracene	10000	1.00E+00	2.00E-07	5.00E+04	1.00E+02
Cadmium	1000	1.00E+00	2.00E-03	5.00E+03	1.00E+04
Chrysene	1000	1.00E+00	2.00E-07	5.00E+02	1.00E-01
Copper	100	1.00E+00	1.00E-02	5.00E+04	5.00E+04
Fluoranthene	1000	1.00E+00	2.00E-05	5.00E+03	1.00E+02
Lead	1000	1.00E+00	2.00E-05	5.00E+03	1.00E+02
Nickel	1000	1.00E+00	2.00E-05	5.00E+02	1.00E+01
Phenanthrene	1000	1.00E+00	2.00E-03	5.00E+01	1.00E+02
Pyrene	10000	1.00E+00	2.00E-05	5.00E+03	1.00E+03
Silver	10000	1.00E+00	2.00E-05	5.00E+01	1.00E+01



PRESCORE 4.0 SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT WASTE CHARACTERISTICS

ASARCO - 08/04/97

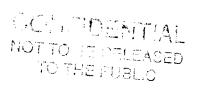
Hazardous Substances Found in an Observed Release

Eco- Ecotoxicity/
Observed Release toxicity Persist. Bio- Persistence/
Hazardous Value Value accum. Bioaccum.
Substance Value Value

⁻ N/A and/or data not specified

PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Source Substances:	5.00E+04
Ecotoxicity/Mobility/Persistence/Bioaccummulation Value from Observed Hazardous Substances:	0.00E+00
Ecotoxicity/Mobility/Persistence/Bioaccummulation Factor:	5.00E+04
Sum of Source Hazardous Waste Quantity Values:	2.94E-05
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	18



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

- N/A and/or data not specified



PREScore 4.0

SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT TARGETS

ASARCO - 08/04/97

Level I Concentrations

Sensitive Environment	Distance from P Point of Entry Sensitive Env.	to En	nsitive vironment lue
- N/A and/or data not	specified		
Sum of Sensitive Environ	ments Values:	0	
Wetlands			
Poir	tance from Probable nt of Entry to land (miles)	Wetlands Frontage	
- N/A and/or data not	specified		
Total Wetlands Frontage:	0.00 Miles	Total Wetlands V	alue: 0
Sum of Sensitive Environ	ments Value + Wetlar	nds Value: 0.00E+	00

Level I Concentrations Factor: 0.00E+00

PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Level II Concentrations

Sensitive Environment	Distance from Distance from Doint of Entry Sensitive Env.	to Enviror	
- N/A and/or data no	ot specified		
Sum of Sensitive Environment	onments Values:	0	
Wetlands			
Pe	istance from Probable oint of Entry to etland (miles)	Wetlands Frontage (mi	les)
- N/A and/or data ne	ot specified		
Total Wetlands Frontage	e: 0.00 Miles	Total Wetlands Value	: 0
Sum of Sensitive Environment	onments Value + Wetla	======================================	

Level II Concentrations Factor: 0.00E+00



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Potential Contamination

Sensitive Environments

Type of Surface Water Body So	ensitive Environment	Sensitive Environment Value	
Coastal Tidal Area	1 Perigrin Falcon	50	
Coastal Tidal Area	2 Least Tern	50	
Coastal Tidal Area	3 Yellow Crowned Nigh	50	

Wetlands

Type of Surface Water Body	Sensitive Environment	Wetlands Frontage	Wetlands Value	
Coastal Tidal Are Coastal Tidal Are Coastal Tidal Are	a 6 wetlands	10.00 25.00 5.00	250 500 150	

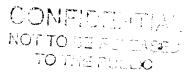
Documentation for Sensitive Environment Perigrin Falcon:

Records of Perigrin Falcon use within 15 miles of the site along the surface water pathway. Ref. 39, pp. 4, 8, 9 of 32.

Documentation for Sensitive Environment Least Tern:

The Least Tern which is a State Endangered species frequents areas along the TDL. Ref. 39, pp. 4, 8, 9 of 32.

Documentation for Sensitive Environment Yellow Crowned Nigh:



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

The State Treatened Yellow-Crowned Night Heron has been reported along the TDL. Ref. 39, pp. 4, 8, 9 of 32.

Documentation for Sensitive Environment wetlands:

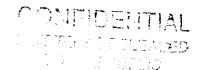
It is estimated that there are 10 miles of wetland frontage along the tidal portions of the Raritan River and Raritan Bay. Ref. 38, p. 1 of 1.

Documentation for Sensitive Environment wetlands:

It is estimated that there are 25 miles of wetland frontage along the Arthur Kill. Ref. 38, p. 1 of 1.

Documentation for Sensitive Environment wetlands:

It is estimated that there are five miles of wetland frontage along the Kill Van Kull and Newark Bay within the TDL. Ref. 38, p. 1 of 1.



PREScore 4.0 SW PATHWAY: GW TO SW COMPONENT ENVIRONMENTAL THREAT TARGETS ASARCO - 08/04/97

Type of Surface Water Body		Sum of Wetland Frontage Values(Wj)	Dilution Weight (Dj)	Dj(Wj+Sj)
Coastal Tidal Waters	150	500	2.00E-05	1.30E-02
	Su	Sum of Dj m of Dj(Wj		1.30E-02 1.30E-03
Potential C	Contamination Sensit	ive Enviro	nment Fact	or: 1.40E-03

PREScore 4.0 SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT LIKELIHOOD OF EXPOSURE ASARCO - 08/04/97

Likelihood of Exposure

No.	Source ID		Level	of	Contamin	nation
1	Contaminated	Soil			Level	II

Likelihood of Exposure Factor: 550

Documentation for Area of Contamination, Source Contaminated Soil:

The area of soil contamination is unknown, therefore an estimate of 1 square foot was used. Ref. 14, pp. 2 thru 5 of 67.

Source No.	e Hazardous Substance	Depth (ft.)	Concent.	Cancer	RFD	Units
1	Arsenic	< 2	0.0E+00	4.3E-01	2.3E+01	ppm
1	Benz(a)anthracene	< 2	0.0E+00	8.8E-01	0.0E+00	ppm
1	Cadmium	< 2	0.0E+00	0.0E+00	3.9E+01	ppm
1	Chrysene	< 2	0.0E+00	8.8E+01	0.0E+00	ppm
1	Copper	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Fluoranthene	< 2	0.0E+00	0.0E+00	3.1E+03	ppm
1	Lead	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Nickel	< 2	0.0E+00	0.0E+00	1.6E+03	ppm
1	Phenanthrene	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Pyrene	< 2	0.0E+00	0.0E+00	2.3E+03	ppm
1	Silver	< 2	0.0E+00	0.0E+00	3.9E+02	ppm

Documentation for Source Contaminated Soil, Contaminants:

Analytical results indicate elevated levels of Arsenic, Cadmium, Copper, Lead, Nickel, and PAHs. Ref. 14, pp. 2 thru 5, 14 thru 17, 40, 43, 46, 49 of 67. The analytical data was used for screening purposes since the data was not validated.

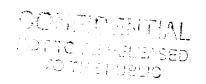


PRESCORE 4.0 SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Source: 1 Contaminated Soil

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value	
Arsenic	10000	
Benz(a)anthracene	1000	
Cadmium	10000	
Chrysene	10	
Copper	0	
Fluoranthene	100	
Lead	10000	
Nickel	10000	
Phenanthrene	О	
Pyrene	100	
Silver	100	



PREScore 4.0 SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Toxicity Factor:	
Sum of Source Hazardous Waste Quantity Values:	2.94E-05
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	18



PREScore 4.0 SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT TARGETS ASARCO - 08/04/97

Tarqets

Level I Population: 0.0

Value: 0.00

Documentation for Level I Population:

There are no residents, daycare facilities, or schools within 200 feet of known contamination. Ref. 44, p. 1 of 1.

Level II Population: 0.0 Value: 0.00

Documentation for Level II Population:

There are no residents, daycare facilties, or schools within 200 feet of known soil contamination. Ref. 44, p. 1 of 1.

Workers:

100.0 Value: 5.00

Documentation for Workers:

There are currently 9 industrial tennants at the facility. It is estimated that there are 100 or fewer workers. Ref. 3, p. 13 of 17.

Resident Individual: Potentia

Value:

0.00

Resources:

NO

Value: 0.00

Documentation for Resources:

There are no resources identified. Ref. 3, p. 13 of 17.

Terrestial Sensitive Environment

Value



PREScore 4.0 SOIL EXPOSURE PATHWAY RESIDENT POPULATION THREAT TARGETS ASARCO - 08/04/97

- N/A and/or data not specified

Terrestrial Sensitive Environments Factor: 0.00

Documentation for Terrestrial Environment:

No terrestrial sensitive environments identified. Ref. 39, pp. 1 of 32.



PREScore 4.0 SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT LIKELIHOOD OF EXPOSURE ASARCO - 08/04/97

Likelihood of Exposure

No.	Source ID	Level of Contamination	Attractiveness/ Accessibility	Area of Contam. (sq. feet)
1	Contaminated Soi	l Level II	5	1
Sum		ss/Accessibility V s Of Contamination n Value: 5		1

Likelihood of Exposure Factor Category: 5

Documentation for Attractiveness/Accessibility, Source Contaminated Soil:

The ASARCO facility is surrounded by a fence. Ref. p. 1 of 1.

Sourc No.	e Hazardous Substance	Depth (ft.)	Concent.	Cancer	RFD	Units
1	Arsenic	< 2	0.0E+00	4.3E-01	2.3E+01	ppm
1	Benz(a)anthracene	< 2	0.0E+00	8.8E-01	0.0E+00	ppm
1	Cadmium	< 2	0.0E+00	0.0E+00	3.9E+01	ppm
1	Chrysene	< 2	0.0E+00	8.8E+01	0.0E+00	ppm
1	Copper	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Fluoranthene	< 2	0.0E+00	0.0E+00	3.1E+03	ppm
1	Lead	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Nickel	< 2	0.0E+00	0.0E+00	1.6E+03	ppm
1	Phenanthrene	< 2	0.0E+00	0.0E+00	0.0E+00	ppm
1	Pyrene	< 2	0.0E+00	0.0E+00	2.3E+03	ppm
1	Silver	< 2	0.0E+00	0.0E+00	3.9E+02	ppm

Documentation for Source Contaminated Soil, Contaminants:

Analytical results indicate elevated levels of Arsenic, Cadmium, Copper, Lead, Nickel, and PAHs. Ref. 14, pp. 2 thru 5, 14 thru 17, 40, 43, 46, 49 of 67. The analytical data was used for screening purposes since the data was not validated.



PREScore 4.0 SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

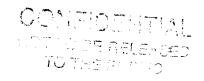


PRESCORE 4.0 SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Source: 1 Contaminated Soil

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value	
Arsenic	10000	
Benz(a)anthracene	1000	
Cadmium	10000	
Chrysene	10	
Copper	0	
Fluoranthene	100	
Lead	10000	
Nickel	10000	
Phenanthrene	0	
Pyrene	100	
Silver	100	



PREScore 4.0 SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT WASTE CHARACTERISTICS ASARCO - 08/04/97

Toxicity Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	2.94E-05
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	18



PREScore 4.0 SOIL EXPOSURE PATHWAY NEARBY POPULATION THREAT TARGETS ASARCO - 08/04/97

Nearby Individual

Population within 1/4 mile: 31.0

Nearby Individual Value: 1.0

Population Within 1 Mile

Travel Distance Category	Number of People	Value	
> 0 to 1/4 mile	31.0	0.1	
> 1/4 to 1/2 mile	92.0	0.1	
> 1/2 to 1 mile	6194.0	3.3	

Population Within 1 Mile Factor: 3.0

Documentation for Population > 0 to 1/4 mile Distance Category:

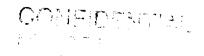
There are 31 residents between 0 and 0.25 miles of the site. Ref. 23, pp. 18, 19, 27, 28 of 28.

Documentation for Population > 1/4 to 1/2 mile Distance Category:

There are 92 residents between 0.25 and 0.5 miles of the site. Ref. 23, pp. 18, 19, 27, 28 of 28.

Documentation for Population > 1/2 to 1 mile Distance Category:

There are 6,194 residents between 0.5 and 1 mile of the site. Ref. 23, pp. 18, 19, 27, 28 of 28.



PREScore 4.0 AIR PATHWAY LIKELIHOOD OF RELEASE ASARCO - 08/04/97

OBSERVED RELEASE

No. Sample ID Distance (miles) Level of Contamination

- N/A and/or data not specified

Observed Release Factor: 0

PREScore 4.0 AIR PATHWAY LIKELIHOOD OF RELEASE ASARCO - 08/04/97

Gas Migration Potential

GAS POTENTIAL TO RELEASE

	Source	Gas Contain Value	Gas Source Type Value	Potent	•	Gas Potential to Rel. Value
Source ID	Type	(A)	(B)	(C)		A(B+C)
Contaminated Soil	Contaminated Soil	7	19	6	25	175

Gas Potential to Release Factor: 175

Documentation for Gas Containment, Source Contaminated Soil:

It is estimated that contaminated soils are covered with substancial ammounts of vegetation in landscaped areas. Ref. 6, p. 2 of 3.

Documentation for Source Type, Source Contaminated Soil:

Analytical results indicate that soils are contaminated. Ref. 14, pp. 3, 13 thru 16 of 67.



PREScore 4.0 AIR PATHWAY LIKELIHOOD OF RELEASE ASARCO - 08/04/97

Source: Contaminated Soil

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value
Benz(a)anthracene	6
Chrysene	6
Fluoranthene	6
Phenanthrene	11
Pyrene	6

Average of Gas Migration Potential Value for 3 Hazardous Substances: 7.667

Gas Migration Potential Value From Table 6-7: 6



PREScore 4.0 AIR PATHWAY LIKELIHOOD OF RELEASE ASARCO - 08/04/97

Particulate Migration Potential

PARTICULATE POTENTIAL TO RELEASE

Source ID	Source Type	Partic. Contain Value (A)	Source .Type	Partic Migrtn Potent Value (C)	Sum	Partic. Potential to Rel. Value A(B+C)
Contaminated Soil	Contaminated Soil	7	22	6	28	196

Particulate Potential to Release Factor:

196

Documentation for Particulate Containment, Source Contaminated Soil:

The contaminated soils are estimated to be covered with uncontaminated soil less that 1' thick, however landscaped areas are heavily vegetated. Ref. 6, p. 2 of 3.

Documentation for Source Type, Source Contaminated Soil:

Analytical results indicate that soils are contaminated. Ref. 14, pp. 3, 13 thru 16 of 67.

Documentation for Particulate Migration Potential:

Based on HRS Figure 6-2. Ref. 1, p. 1 of 1.

PREScore 4.0 AIR PATHWAY WASTE CHARACTERISTICS ASARCO - 08/04/97

Source: Contaminated Soil

Particulate Hazardous Substance

Arsenic
Benz(a) anthracene
Cadmium
Chrysene
Copper
Fluoranthene
Lead
Nickel
Phenanthrene
Pyrene
Silver



PREScore 4.0 AIR PATHWAY WASTE CHARACTERISTICS ASARCO - 08/04/97

Source: 1 Contaminated Soil

Source Hazardous Waste Quantity Value: 0.00

Hazardous Substance	Toxicity Value	Gas Mobility Value	Particulate Mobility Value	Toxicity/ Mobility Value
Arsenic	10000	NA	2.00E-04	2.00E+00
Benz(a)anthracene	1000	2.00E-03	2.00E-04	2.00E+00
Cadmium	10000	NA	2.00E-04	2.00E+00
Chrysene	10	2.00E-04	2.00E-04	2.00E-03
Copper	0	NA	2.00E-04	0.00E+00
Fluoranthene	100	2.00E-03	2.00E-04	2.00E-01
Lead	10000	NA	2.00E-04	2.00E+00
Nickel	10000	NA	2.00E-04	2.00E+00
Phenanthrene	0	2.00E-02	2.00E-04	0.00E+00
Pyrene	100	2.00E-03	2.00E-04	2.00E-01
Silver	100	NA	2.00E-04	2.00E-02

PREScore 4.0 AIR PATHWAY WASTE CHARACTERISTICS ASARCO - 08/04/97

Hazardous Substances Found in an Observed Release

Sample Observed Release
ID Hazardous Substance

Particulate Toxicity/ Mobility Value

Gas
Toxicity/
Mobility Value

- N/A and/or data not specified

Documentation for Particulate Mobility:

Based on HRS Figure 6-2 and 6-3. Ref. 1, p. 1 of 1.

PREScore 4.0 AIR PATHWAY TARGETS ASARCO - 08/04/97

Toxicity/Mobility Value from Source Hazardous Substances:	2.00E+00
Toxicity/Mobility Value from Observed Release Hazardous Substances:	0.00E+00
Toxicity/Mobility Factor:	2.00E+00
Sum of Source Hazardous Waste Quantity Values:	2.94E-05
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	2



PREScore 4.0 AIR PATHWAY TARGETS ASARCO - 08/04/97

Actual Contamination

No. Sample ID Distance (miles) Level of Contamination

Potential Contamination

Distance Categories Subject to Potential Contamination	Population	Value	
Onsite	100.0	5.3000	
> 0 to 1/4 mile	31.0	1.3000	
> 1/4 to 1/2 mile	92.0	0.3000	
> 1/2 to 1 mile	6194.0	8.3000	
> 1 to 2 miles	45471.0	26.6000	
> 2 to 3 miles	47809.0	12.0000	
> 3 to 4 miles	148908.0	22.9000	

Potential Contaminantion Factor: 77.0000

Documentation for Population Onsite Distance Category:

It is estimated that there are 100 or less workers on-site. Ref. 3, p. 13 of 17.

Documentation for Population > 0 to 1/4 mile Distance Category:

There are 31 persons within 0 to 0.25 miles of the site. Ref. 23, pp. 18, 19, 27, 28 of 28.

Documentation for Population > 1/4 to 1/2 mile Distance Category:



⁻ N/A and/or data not specified

PREScore 4.0 AIR PATHWAY TARGETS ASARCO - 08/04/97

There are 92 persons in the 0.25 to 0.5 mile radius of the site. Ref. 23, pp. 18, 19, 27, 28 of 28.

Documentation for Population > 1/2 to 1 mile Distance Category:

There are 6,194 persons in the 0.5 to 1 mile radius. Ref. 23, pp. 18, 19, 27, 28 of 28.

Documentation for Population > 1 to 2 miles Distance Category:

There are 45,471 persons in the 1 to 2 mile radius. Ref. 23, pp. 18, 19, 27, 28 of 28.

Documentation for Population > 2 to 3 miles Distance Category:

There are 47809 persons in the 2 to 3 mile radius. Ref. 23, pp. 18, 19, 27, 28 of 28.

Documentation for Population > 3 to 4 miles Distance Category:

Ther are 148,908 persons in the 3 to 4 mile radius. Ref. 23, pp. 18, 19, 27, 28 of 28.



PREScore 4.0 AIR PATHWAY TARGETS ASARCO - 08/04/97

Nearest Individual Factor

Level of Contamination: Potential

Distance in miles: 0 to 1/8

Nearest Individual Value: 20

Documentation for Nearest Individual:

The nearest individual is located approximately 0.25 miles from the site. Ref. 43, p. 1 of 1.

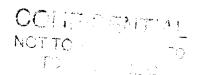
Resources

Resource Use: NO

Resource Value: 0

Documentation for Resources:

No resources identified. Ref. 3, p. 13 of 17.



PREScore 4.0 AIR PATHWAY TARGETS ASARCO - 08/04/97

Actual Contamination, Sensitive Environments

Sensitive Environment	Distance (miles)	Sensitive Environment Value
- N/A and/or data not	specified	
Actual Contamination, W	etlands	
·		
Distance Category	Wetland Acreage	Wetland Acreage Value
	Acreage	
Category	Acreage	
Category	Acreage specified	Acreage Value



PREScore 4.0 AIR PATHWAY TARGETS ASARCO - 08/04/97

Potential Contamination, Sensitive Environments

Sensitive Environment	Distance (miles)	Sensitive Environment Value	Distance Weight	Weighted Value/10
- N/A and/or data not sp	ecified			

Potential Contamination, Wetlands

Distance	Wetland	Wetland	Distance	Weighted
Category	Acreage	Acreage Value	Weight	Value/10
> 3 to 4 miles	450.0	450.0	0.0014	0.063
> 2 to 3 miles	313.0	350.0	0.0023	0.081
> 1 to 2 miles	179.0	175.0	0.0051	0.089
> 1/2 to 1 mile	27.0	25.0	0.0160	0.040
> 1/4 to 1/2 mile	4.0	25.0	0.0540	0.135

Total Wetland Acreage: 973.0

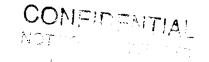
Sum of Wetland Weighted Acreage Values/10: 0.408

Sensitive Environment Potential Contamination Factor: 0.408

Documentation for Sensitive Environment Wetland:

There are 4 acres of wetlands between 0.25 and 0.5 miles of the site. Ref. 38, p. 1 of 1.

Documentation for Sensitive Environment Wetland:



PREScore 4.0 AIR PATHWAY TARGETS ASARCO - 08/04/97

There are 27 acres of wetland between 0.5 and 1 mile of the site. Ref. 38, p. 1 of 1.

Documentation for Sensitive Environment Wetland:

There are 179 acres of wetlands between 1 and 2 miles of the site. Ref. 38, p. 1 of 1.

Documentation for Sensitive Environment Wetland:

There are 313 acres of wetlands between 2 and 3 miles of the site. Ref. 38, p. 1 of 1.

Documentation for Sensitive Environment Wetland:

There are 450 acres of wetlands between 3 and 4 miles of the site. Ref. 38, p. 1 of 1.

